

Attachment 10 – Costs and Benefits Summary

Project 1: Consolidated Irrigation District South and Highland Basin

The proposed project costs discussed in **Attachment 4** and costs and benefits discussed in **Attachments 7** and **8** are summarized in **Table 20**. Project costs are included in **Table 7 – Project Budget** and **Table 11 – Annual Cost of Project**, and cover project capital costs including planning, design, engineering, environmental documentation and compliance, construction implementation and administration, and construction contingency, as well as annual costs of the project including administration, operation, maintenance, and replacement costs.

Annual water supply benefits are summarized in **Table 12**, and include the benefit of water conservation, which is allocated a monetary value per acre foot of water conserved. Water quality and other expected benefits are summarized in **Table 16**, and include the power cost associated with the reduction in pumping due to decreased water consumption.

The present value of the project costs compared with the total present value of the project benefits yields a benefit to cost ratio of 1.2.

Project 2: City of Clovis SWTP Expansion

The City of Clovis Surface Water Treatment Plant Expansion Project is beneficial for the local groundwater basin, surrounding communities and for the City of Clovis. The estimated cost of the project, over the 50 project life, is \$8,855,226.00. The estimated cost savings of the Expansion project (rather than groundwater pumping), over the 50 year project life, is \$10,656,346.00. The expansion project will save the City of Clovis an estimated \$1,801,119.00, which is a benefit-cost ratio of 1.2. DWR Economic Table 20 is included in this attachment section.

Project 3: Fresno County Drummond Jensen Sewer Connection Study

The proposed project costs discussed in **Attachment 4** and costs and benefits discussed in **Attachments 7** and **8** are summarized in **Table 20**. Project costs are included in **Table 7 – Project Budget** and **Table 11 – Annual Cost of Project**, and cover project costs including planning, design, engineering, and environmental documentation and compliance. The project costs for this phase of the project do not include any capital construction costs, since this project is a disadvantaged community feasibility study. Thus, the benefits of this study phase of the project are not included in this Cost and Benefits analysis. This project is eligible for Proposition 84 IRWM Implementation funding per the “DAC Water Quality/Supply Projects” section on page 17 of the Proposition 84 IRWM Guidelines.

Project 4: East Oroquieta CSD Water Well Rehabilitation Project

The proposed project costs discussed in **Attachment 4** and costs and benefits discussed in **Attachments 7** and **8** are summarized in **Table 20**. Project costs are included in **Table 7 – Project Budget** and **Table 11 – Annual Cost of Project**, and cover project capital costs including planning, design, engineering, environmental documentation and compliance, construction implementation and administration, and construction contingency, as well as annual costs of the project including administration, operation, maintenance, and replacement costs.

While annual water supply benefits were not quantified, the costs of the avoided alternative water quality related project is summarized in **Table 16**, summarizing the cost of constructing two new replacement production wells.

The present value of the project costs compared with the total present value of the project benefits yields a benefit to cost ratio of 14.5.

Project 5: City of Fresno Residential Water Meter Project (Area IV)

A comprehensive evaluation of costs and benefits associated to this project yields a benefit B/C Ratio of 0.6. Although on the surface this ratio might imply a project of marginal return, it fails to recognize the significant cost of the project which is attributed to retrofitting existing residential services to be meter ready. Of the 110,000 residential services to be equipped with meters and AMR devices, only about 34,000 of them are meter ready. The remaining 76,000 are for homes constructed prior to 1992. Each of these services requires being located, raised to the proper grade, installation of a meter yoke, and installation of a meter box. If the cost of the project is evaluated without this expensive retrofitting it yields a B/C Ratio of 1.3. Often times the return of projects are jaded by oversight and simplistic evaluations. Although the B/C Ratio is one approach to evaluate projects it isn't always the best.

Project 6: Bakman Water Company Water Meter Installation Project

The proposal project costs discussed in **Attachment 4** and costs and benefits discussed in **Attachments 7** and **8** are summarized in Table 20. Project costs are included in Table 7 – Project Budget and Table 11 – Annual Cost of Project, and cover project capital costs including planning, design, engineering, environmental documentation and compliance, construction implementation and administration, and construction contingency, as well as annual costs of the project including administration, operation, maintenance, and replacement costs.

Annual water supply benefits are summarized in Table 12, and include the benefit of water conservation, which is allocated a monetary value per acre foot of water conserved. Water quality and other expected benefits are summarized in Table 16, and include the power cost associated with the reduction in pumping due to decreased water consumption.

The total present value of project costs as summarized in Table 11 is \$2,676,568. The total present value of the water supply benefit associated with the volume of water conserved as a result of this project is \$1,419,495. The total present value of the reduction in power costs due to reduced pumping is \$348,790, for a total project benefit of \$1,768,285. The present value of the project costs compared with the total present value of the project benefits yields a benefit to cost ratio of 0.7. While the project may have a low benefit to cost ratio today, the cost of water on the open market is most likely to increase in the future, further increasing the benefits of meter installation. The use of water meters within Bakman Water Company will also help ensure that this disadvantaged community is eligible to receive water from additional sources in the future when water meters are a requirement.

Table 20 - Proposal Project Costs and Benefits Summary Proposal: Groundwater Overdraft Reduction and Disadvantaged Community Water Supply Reliability Projects Agency: Consolidated Irrigation District - South and Highland Basin Project - Full Funding							
Project	Agency	Total Present Value Project Costs (1)	Total Present Value Project Benefits				B/C Ratio
			Water Supply (2)	Flood Damage Reduction (3)	Other (4)	Total	
(a)	(b)	(c)	(d)	(e)	(f)	(g) (d) + (e) + (f)	(h) (g) / (c)
CID South & Highland Basin	CID	\$6,412,245	\$7,916,390	\$0	\$0	\$7,916,390	1.2
City of Clovis SWTP Expansion	City of Clovis	\$8,766,881	\$10,656,346	\$0	\$0	\$10,656,346	1.2
Drummond Jensen Ave Sewer Connection Study (DAC)	Fresno County	\$105,990	\$0	\$0	\$0	\$0	0.0
East Orosi Well Rehabilitation (DAC)	East Orosi CSD	\$114,927	\$0	\$0	\$1,943,131	\$1,943,131	16.9
City of Fresno Residential Water Meter Project (Area IV)	City of Fresno	\$7,484,309	\$3,468,265	\$0	\$932,908	\$4,401,173	0.6
Bakman Water Meter Installation Project (DAC)	Bakman WC	\$2,676,568	\$1,419,495	\$0	\$348,790	\$1,768,285	0.7
TOTAL		\$25,560,921	\$23,460,495	\$0	\$3,224,829	\$26,685,324	1.0

(1) From Exhibit C, Table 11, column (i). Or from Exhibit #, Table 17, column (i). If project is a multi-purpose project, avoid double-counting costs.

(2) From Exhibit C, Table 15, column (d)

(3) From Exhibit E, Table 19, row (e)

(4) From Exhibit D, Table 16, column (j)

Table 20 - Proposal Project Costs and Benefits Summary Proposal: Groundwater Overdraft Reduction and Disadvantaged Community Water Supply Reliability Projects Agency: Consolidated Irrigation District - South and Highland Basin Project - Reduced Funding							
Project	Agency	Total Present Value Project Costs (1)	Total Present Value Project Benefits				B/C Ratio
			Water Supply (2)	Flood Damage Reduction (3)	Other (4)	Total	
(a)	(b)	(c)	(d)	(e)	(f)	(g) (d) + (e) + (f)	(h) (g) / (c)
CID South & Highland Basin	CID	\$4,193,886	\$3,799,867	\$0	\$0	\$3,799,867	0.9
City of Clovis SWTP Expansion	City of Clovis	\$8,766,881	\$10,656,346	\$0	\$0	\$10,656,346	1.2
Drummond Jensen Ave Sewer Connection Study (DAC)	Fresno County	\$105,990	\$0	\$0	\$0	\$0	0.0
East Orosi Well Rehabilitation (DAC)	East Orosi CSD	\$114,927	\$0	\$0	\$1,943,131	\$1,943,131	16.9
City of Fresno Residential Water Meter Project (Area IV)	City of Fresno	\$7,484,309	\$3,468,265	\$0	\$932,908	\$4,401,173	0.6
TOTAL		\$20,665,994	\$17,924,477	\$0	\$2,876,039	\$20,800,516	1.0

(1) From Exhibit C, Table 11, column (i). Or from Exhibit #, Table 17, column (i). If project is a multi-purpose project, avoid double-counting costs.

(2) From Exhibit C, Table 15, column (d)

(3) From Exhibit E, Table 19, row (e)

(4) From Exhibit D, Table 16, column (j)